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# Agricultural Memorandum No. 262

## Butterfat Content of Milk. Effect of March soil temperatures

The March soil temperatures (1ft earth) have often been used to indicate the timing of spring grass growth.

It might therefore be thought that this parameter should have some bearing on the change in butterfat from the 1st quarter (Jan.-Mar.) to the 2nd quarter (Apr.-Jun.), nevertheless the correlation is practically zero.

There is however a high correlation (0.89) with the change from the 2nd to the 3rd quarter.

The regression equation is

$$\text{Change in butterfat} \times 100 = 0.8\,Sm - 18.6$$

where Sm is the March 1ft soil temperature at Oxford in °F.

| Results | Year | Sm | Change 2nd → 3rd quarter | | |
|---|---|---|---|---|---|
| | | | Est. | Actual | Error |
| | 1958 | 40.0 | 0.14 | 0.14 | 0.0 |
| | 1959 | 44.1 | 0.17 | 0.16 | +0.01 |
| | 1960 | 44.0 | 0.17 | 0.17 | 0.0 |
| | 1961 | 45.3 | 0.18 | 0.16 | +0.02 |
| | 1962 | 38.1 | 0.12 | 0.12 | 0.0 |
| | 1963 | 38.8 | 0.12 | 0.12 | 0.0 |
| | 1964 | 40.8 | 0.14 | 0.14 | 0.0 |
| | 1965 | 40.8 | 0.14 | 0.16 | -0.02 |
| | 1966 | 43.7 | 0.16 | 0.16 | 0.0 |
| | 1967 | 44.2 | 0.17 | 0.16 | +0.01 |

No reason can be thought of which would explain this coincidence.

Any comments or criticism on this memorandum should be sent to the author.

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